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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.	
09/850,172	05/07/2001	Susan T. Dumais	MS167386.1	1240	
27195	7590 04/05/2004		EXAMINER		
	AMIN & TUROCY, LLP			HIRL, JOSEPH P	
24TH FLOOR, NATIONAL CITY CENTER 1900 EAST NINTH STREET			ART UNIT	PAPER NUMBER	
CLEVELAN	D, OH 44114		2121		
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Please find below and/or attached an Office communication concerning this application or proceeding.

8

•		Application No.	Applicant(s)	Ob-
Office Action Summary		09/850,172	DUMAIS ET AL.	
		Examiner	Art Unit	
		Joseph P. Hirl	2121	
<i> The M.</i> Period for Reply	AILING DATE of this communica	tion appears on the cover she	eet with the correspondence a	ddress
THE MAILING - Extensions of time after SIX (6) MOI - If the period for re - If NO period for re - Failure to repty we Any repty received	ED STATUTORY PERIOD FOR DATE OF THIS COMMUNICATE of any be available under the provisions of STHS from the mailing date of this communicately specified above is less than thirty (30) deply is specified above, the maximum statuth ithin the set or extended period for reply will do by the Office later than three months after an adjustment. See 37 CFR 1.704(b).	ATION. FOR 1.136(a). In no event, however, cation. ays, a reply within the statutory minimum pry period will apply and will expire SIX (6, by statute, cause the application to become the statute.	may a reply be timely filed of thirty (30) days will be considered time b) MONTHS from the mailing date of this ome ABANDONED (35 U.S.C. § 133).	
Status	•			
1) Respon	sive to communication(s) filed	on <i>20 January 2004</i> .		
2a)⊠ This act	• •	☐ This action is non-final.		
3) Since th	is application is in condition for	allowance except for formal	matters, prosecution as to th	e merits is
closed in	n accordance with the practice	under <i>Ex parte Quayle</i> , 1935	5 C.D. 11, 453 O.G. 213.	
Disposition of CI	aims			
4a) Of th 5)☐ Claim(s)) <u>1-28,30 and 31</u> is/are pending e above claim(s) is/are) is/are allowed.) <u>1-28,30 and 31</u> is/are rejected	withdrawn from consideration	1.	
) is/are objected to.) are subject to restrictio	n and/or election requiremen	ıt.	
Application Pape	rs			
•	cification is objected to by the E	xaminer		
	ving(s) filed on <u>10 August 2001</u>		objected to by the Examine	er.
	t may not request that any objection		•	
	ment drawing sheet(s) including the			* *
11) The oath	or declaration is objected to by	y the Examiner. Note the atta	ached Office Action or form P	TO-152.
Priority under 35	U.S.C. § 119			
a)	edgment is made of a claim for	cuments have been received cuments have been received the priority documents have I	l. I in Application No Deen received in this National	l Stage
	ttached detailed Office action for	or a list of the certified copies	s not received.	
Attachment(s) Notice of Refere	ences Cited (PTO-892)	4) Inter	view Summary (PTO-413)	
2) 🔲 Notice of Drafts	person's Patent Drawing Review (PTO dosure Statement(s) (PTO-1449 or PT	-948) Pape	r No(s)/Mail Date e of Informal Patent Application (PT	O-152)

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DETAILED ACTION

1. This Office Action is in response to an AMENDMENT entered January 20, 2004 for the patent application 09/850,172 filed on May 7, 2001.

- 2. The First Office Action of October 2, 2003 is fully incorporated into this Final Office Action by reference.
- 3. The claims and only the claims form the metes and bounds of the invention. "Office personnel are to give the claims their broadest reasonable interpretation in light of the supporting disclosure. *In re Morris,* 127 F.3d 1048, 1054-55, 44USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. *In re Prater,* 415 F.2d, 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969)" (MPEP p 2100-8, c 2, l 45-48; p 2100-9, c 1, l 1-4). The Examiner has full latitude to interpret each claim in the broadest reasonable sense. Examiner will reference prior art using terminology familiar to one of ordinary skill in the art. Such an approach is broad in concept and can be either explicit or implicit in meaning.

4. Examiner's Opinion:

Para 3 above applies. The claims and only the claims form the metes and bounds of the invention. Examiner has full latitude to interpret each claim in the broadest reasonable sense. Applicant is encourage to fully review these two points since it is from this perspective that the application is examined. Claim terminology is very important.

Status of Claims

5. Claims 5,10, 11, 18 and 23 are amended. Claim 29 is cancelled, Claims 30 and 31 are new. Claims 1-28 and 30-31 are pending.

Claim Objections

6. Claim 18, line 1 establishes a circular dependence, that is of claim 18 upon itself creating a pseudo independent claim with internal dependence. This objection must be corrected.

Response to Arguments

- 7. Claim objections to claims 10 and 23 are withdrawn.
- 8. Claim 29 rejection under 35 USC 101 is withdrawn.
- 9. Claim 11 rejection under 35 USC 112, second paragraph is withdrawn.
- 10. Applicant's arguments filed on January 20, 2004 related to Claims 1-28 and 30-
- 31 have been fully considered but are not persuasive.

In reference to Applicant's argument:

Applicants' representative respectfully submits that the terms "classic" and "classical" as recited claims 5, 9, 16-19 and 22 are set forth in the specification of the subject invention and are known to those of ordinary skill in the art.

The Examiner has further indicated that the terms "potentially" and "useful" are relative terms and render claim 20 indefinite.

Claim 20 is directed to a method of identifying useful reliability indicators and recites a limitation of "obtaining potentially useful reliability indicators". Applicants' representative respectfully submits that the phrase "potentially useful" is set forth in the specification of the subject invention and is further known to those of ordinary skill in the art.

Examiner's response:

Para 3 above applies. The claims and only the claims form the metes and bounds of the invention. Claims *without specificity* place one of ordinary skill in the art a significant disadvantage should such an individual attempt to recreate the invention. Simply stated, one of ordinary skill in the art would be required to exercise *undue experimentation* to replicate the invention.

In reference to Applicant's argument:

The subject invention generally relates to information management anal in particular to a system and method for automatically classifying items. (p. 1, lines 6, 7). The invention provides meta-classifiers and systems and methods for building meta-classifiers. (p. 2, lines 17, 18). Meta-classifiers are combinations of multiple classifiers. (p. 1, lines 23, 24) A meta-classifier provides a determination or indication of whether an item belongs in a particular category. (p. 2, lines 18, 19), 'floe meta-classifiers of the invention apply a probabilistic approach to combining evidence regarding the correct classification of items. (p. 2, lines 19-21). Thus, meta-classifiers of the invention take the form of probabilistic dependency models. (p. 2, lines 21, 22). Using a set of training data arid machine learning techniques, the probabilistic dependency models are constructed to effectively utilize evidence that can include the outputs of multiple classifiers. (p. 2, lines 22-24). Additionally, the probabilistic dependency models of the invention can consider additional evidence, such as one or more reliability indicators. (p. 2, lines 25, 26).

To the contrary, Gjerdingen et al. discloses "[a] method for creating a database that allows content based searching in the music domain." Abstract. Gjerdingen et al. employs feature vectors which are employed to compare music samples. (Col. 3, 18-20). The feature vectors of Gjerdingen et al. can include a vocal quality vector, a sound quality vector, a situational quality vector, a genre vector, an ensemble vector and an instrument vector- (Col. 12, line 21 - col. 14, line 35). A modeling module analyzes acquired data and performs a similarity computation. (Col. 15, lines 6, 7). The similarity computation determines the optimum function that can represent similarity between different music samples, based upon defined music attributes (i.e. feature vector values). (Col. 15, lines 6-11).

A function Fij represents the distances between music sample i and j and may be illustrated as: WgDg + WeDe + WvDv + WtDt + WiDi

where Wg, We, Wv, Wt and Wi are individual weights allocated to individual music spaces. (Col. 16, lines 26 - 32). The plural weights Wg, We, Wt and Wi are calculated such that S 1 and Fij are at a minimum distance from each other. (Col. 16, lines 32-34).

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Function Fij may be fit using linear regression or by nonlinear regression techniques. (Co- 16, lines 39, 40). Other tools may be used to compute the weights shown and fit function Fij: Bayesian estimation techniques; neural network techniques, classification trees and hierarchical clustering. (Col. 16, line 45 - Col. 17, line 21).

With regard to classification trees, Gjerdingen et al- discloses "[c]lassification trees define a hierarchical or recursive partition of a set based on the values of a set of variables." (Col. 17, lines 40 - 42). "In the present case, the variables are the elements of plural feature vectors." (Col. 17, lines 42, 43). "A decision tree is a procedure for classifying music into categories according to their feature vector values." (Col- 17, lines 43 - 45). "Expert pairwise data 403A may be used to define a satisfactory decision tree and then the tree may be applied to a larger set of music." (Col. 17, lines 45 - 48)_ "This method partitions music samples into mutually exclusive categories, wherein music samples within each category are considered similar." (Col. 17, lines 48 - .50).

Examiner's response:

Para 3 above applies. The claims and only the claims form the metes and bounds of the invention.

In reference to Applicant's argument:

Independent claims 1 and 24

Independent claim 1 of the subject invention recites limitations of "a computer system component that applies probabilistic dependency models ... wherein the probabilistic dependency models collectively employs outputs from a plurality of classifiers". Similarly, independent claim 24 recites limitations of "applying probabilistic dependency models ... wherein the probabilistic dependency models collectively contain dependencies on outputs from a plurality of classifiers."

Contrary to the Examiner's assertion, Gjerdingen et al. does not disclose combining the outputs of a plurality of classifiers to form a probabilistic dependency model. Applicants' representative acknowledges that classifiers based on probabilistic dependency models include classifiers based on decision trees models, support vector machines, Bayesian belief networks, and neural networks (p. 1, lines 14-16).

However, the disclosure of these classifiers in Gjerdingen et al. is limited to computation of weights and function fitting. Gjerdingen et al. does not teach, disclose or suggest the combination of a plurality of classifiers to form the probabilistic classifier as set forth in independent claims 1 and 24.

Examiner's response:

First Office Action applies. Simply stated, applicant does not claim "the combination of a plurality of classifiers to form the probabilistic classifier" in independent claims 1 and 24.

In reference to Applicant's argument:

Independent claims 5, 9 and 14

Independent claim 5 of the subject invention, as amended herein, is directed to a computer system for classifying items and recites a limitation of "a computer system component that applies a probabilistic dependency model to classify an item, wherein the probabilistic dependency model contains dependencies on one or more classical outputs from a plurality of classifiers and dependencies on one or more reliability indicators".

Similarly, independent claim 9, as amended herein, is directed to computer system and recites a limitation of "a first computer system component that learns, from training examples, probabilistic dependency models for classifying items according to one or more reliability indicators together with classical outputs from a plurality of classifiers". Independent claim 14 is directed to a computer readable medium having computer executable instructions for performing steps comprising "implementing a plurality of classifiers adapted to receive and classify at least one item, the plurality of classifiers each generating a score related to classification of the at least one item; and for each of one or more categories, facilitating classification, selection, and/or utilization of the at least one item with a probabilistic dependency model that employs one or more of the scores and, in addition, one or more reliability indicators".

"[R]eliability indicators are, in a broad sense, attributes of the items being classified." (p. 2, line 27).

"These attributes can include characteristics of an item, source of an item, and meta-level outputs of classifiers applied to the item." (p. 2, lines 28, 29). "In general, a reliability indicator provides an indication of a classifier's reliability in classifying certain groups of items." (p. 2, lines 29 - p. 3, line 1).

As discussed previously, Gjerdingen et al. does not disclose combining the outputs of a plurality of classifiers to form a probabilistic dependency model. Furthermore, Gjerdingen et al. does not disclose employment of reliability indicators with regard to the combination of the plurality of classifiers.

Examiner's response:

First Office Action applies. Simply stated, applicant does not claim "the combination of a plurality of classifiers to form the probabilistic classifier" nor "employment of reliability indicators with regard to the combination of the plurality of classifiers." The applicant is invited to return to para 3 above and fully appreciate that: "The claims and only the claims form the metes and bounds of the invention." Claim terminology is very important.

In reference to Applicant's argument:

Independent claim 16

Independent claim 16 of the subject invention is directed to a system for classifying items and recites a limitation of "means for determining a model that classifies the items based on a probabilistic approach that combines information about the items including one or more classical outputs of classifiers and one or more attributes of the items other than classical outputs of classifiers".

As discussed previously, Gjerdingen et al. does not disclose combining the outputs of a plurality of classifiers to form a model. Furthermore, Gjerdingen et al. does not disclose employment of attributes with regard to the combination of the plurality of classifiers.

Examiner's response:

Para 3 above applies. To one of ordinary skill in the art, a classification tree will combine information about the items including one or more classical outputs of classifiers and one or more attributes of the items other than classical outputs of classifiers. The classification tree has various classifications and various nodes that are combined. The tree is the model.

In reference to Applicant's argument:

Independent claim 17

Independent claim 17 of the subject invention is directed to a computer-readable medium having stored thereon a data structure useful in classifying items anal recites first data fields containing data representing an attribute to test, wherein the attributes represented include both classical classifier outputs and reliability indicators;

second data fields corresponding to the first data fields and containing data representing values against which to compare the attributes;

third data fields containing data representing classifier outcomes;

fourth data fields facilitating determination of relationships among instances of the first second, and third data fields, the relationships having a decision tree structure with the first and second data fields corresponding to decision nodes and the third data fields corresponding to leaf nodes.

As discussed previously, Gjerdingen et al does not disclose combination classifier outputs and reliability indicators to classify items.

Examiner's response:

First Office Action applies. Simply stated, applicant does not claim "combination classifier outputs and reliability indicators to classify items." The applicant is invited to return to para 3 above and fully appreciate that: "The claims and only the claims form the metes and bounds of the invention." Claim terminology is very important.

In reference to Applicant's argument:

Independent claim 19

Independent claim 19 is directed to a method of generating a classifier and recites a limitation of "applying a probabilistic approach that uses the training examples to develop a model that combines evidence to provide an output relating to whether an item. belongs in a category ... wherein the evidence comprises one or more classical outputs of other classifiers and one or more attributes of the item other than the classical outputs of classifiers". (emphasis added). As discussed previously, Gjerdingen et al. does not disclose the combination of classifier outputs and attributes to classify items.

Examiner's response:

Para 3 above applies. To one of ordinary skill in the art, a classification tree will combine information about the items including one or more classical outputs of classifiers and one or more attributes of the items other than classical outputs of classifiers. The classification tree has various classifications and various nodes that are combined. The tree is the model.

In reference to Applicant's argument:

Independent claim 24

Independent claim 24 is directed to a method of classifying items and recites limitations of "applying probabilistic dependency models, one for each of a plurality of categories, to an item stored in computer readable format to provide an output relating to whether the item belongs in the category with respect to each of the plurality of categories; wherein the probabilistic dependency models collectively contain dependencies on outputs from a plurality of classifiers." Gjerdingen et al. does not disclose the combination of classifier outputs to classify items.

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Examiner's response:

First Office Action applies. Simply stated, applicant does not claim "combination

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classifier outputs and reliability indicators to classify items." The applicant is invited to

return to para 3 above and fully appreciate that: "The claims and only the claims form

the metes and bounds of the invention." Claim terminology is very important.

In reference to Applicant's argument:

Independent claim 27

Independent claim 27 is directed to a method of combining a plurality of classifiers to classify items and recites a limitation of "sequentially applying tests to the items to obtain test results". As discussed previously, Gjerdingen et al. does not disclose the combination of classifier outputs to classify items.

First Office Action applies. Simply stated, applicant does not claim in the body of the claim "combination classifier outputs and reliability indicators to classify items." The applicant is invited to return to para 3 above and fully appreciate that: "The claims and only the claims form the metes and bounds of the invention." Claim terminology is very important.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

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(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

12. Claims 1-28 and 30-31 are rejected under 35 U.S.C. 102(e) as being anticipated by Gjerdingen et al (US Patent 6,539,395, referred to as **Gjerdingen**).

Claims 1, 24

Gjerdingen anticipates a computer system component that applies probabilistic dependency models, one for each of a plurality of categories, to an item to provide with respect to each of the plurality of categories an indication of whether the item belongs (**Gjerdingen**, Fig. 1; col 17, lines 35-50; Examiner's Note: (EN): decision trees are probabilistic dependency models; to one of ordinary skill in the art, the composite or meta tree of Gjerdingen is in fact the combined representation of "one for each of a plurality of categories"); wherein the probabilistic dependency models collectively employ outputs from a plurality of classifiers (**Gjerdingen**, col 17, lines 35-50); and the outputs employed by the probabilistic dependency models vary among the probabilistic dependency models (**Gjerdingen**, col 17, lines 35-50; EN: the singular sections of Gjerdingen's tree terminate in a classification which will vary from that of other singular sections of Gjerdingen's tree).

Claim 2

Gjerdingen anticipates the dependency models collectively employ one or more reliability indicators (**Gjerdingen**, col. 17, lines 40-42).

Claims 3, 7, 12, 21, 26

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Gjerdingen anticipates probabilistic dependency models are decision trees (Gjerdingen, col 17, lines 35-50).

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Claims 4, 8, 13

Gjerdingen anticipates the items are texts (**Gjerdingen**, col. 5, lines 20-27).

Claim 5

Gjerdingen anticipates a computer system component that applies a probabilistic dependency model to classify an item, wherein the probabilistic dependency model contains dependencies on one or more classical outputs from a plurality of classifiers and dependencies on one or more reliability indicators (Gierdingen, Fig. 1; col 17, lines) 35-50; EN: the composite tree or parent tree representing a family of child trees will by consequence contain dependencies related to outputs from various members of the family, depending on the branch of the composite that one is addressing; a tree being a multiple classifier or classifiers).

Claim 6

Gjerdingen anticipates the computer system outputs a quantitative measure relating to confidence that the item belongs in a category (Gjerdingen, col 18, lines 4-9).

Claim 9

Gjerdingen anticipates a first computer system component that learns, from training examples, probabilistic dependency models for classifying items according to one or more reliability indicators together with classical outputs from one or more classifiers (Gjerdingen, col 17, lines 51-67; col 18, lines 1-3).

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Claim 10

Gjerdingen anticipates a second computer system component that repeatedly invokes the first component to learn probabilistic dependency models employing various potentially effective reliability indicators and compares the performances of the resulting probabilistic dependency models to identify reliability indicators that are effective (**Gjerdingen**, col 18, lines 21-29).

Claim 11

Gjerdingen anticipates the first computer system component employs the classical outputs from classifiers and the reliability indicators in the same manner (**Gjerdingen**, col 18, lines 21-29).

Claim 14

Gjerdingen anticipates implementing a plurality of classifiers adapted to receive and classify at least one item, the plurality of classifiers each generating a score related to classification of the at least one item (**Gjerdingen**, col 17, lines 35-50; col 18, lines 4-9); and for each of one or more categories, facilitating classification, selection, and/or utilization of the at least one item with a probabilistic dependency model that employs one or more of the scores and, in addition, one or more reliability indicators (**Gjerdingen**, col 17, lines 51-67; col 18, lines 1-9).

Claim 15

Gjerdingen anticipates the instructions implement a different probabilistic dependency model for each of two or more categories (**Gjerdingen**, col 17, lines 35-50; col 18, lines 4-9; EN: such is the purpose of a decision tree); the probabilistic

dependency models are based on subsets of parameters selected from the group consisting of the scores and the reliability indicators (**Gjerdingen**, col 17, lines 35-50; col 18, lines 4-9); and the subsets of parameters vary among the probabilistic dependency models (**Gjerdingen**, col 17, lines 35-50; col 18, lines 4-9; EN: such is the purpose of a tree or classification algorithm).

Claim 16

Gjerdingen anticipates means for determining a model that classifies the items based on a probabilistic approach that combines information about the items including one or more classical outputs of classifiers and one or more attributes of the items other than classical outputs of classifiers (**Gjerdingen**, col 17, lines 35-50); and means for applying the model to classify the items (**Gjerdingen**, col 17, lines 35-50).

Claim 17

Gjerdingen anticipates first data fields containing data representing an attribute to test, wherein the attributes represented include both classical classifier outputs and reliability indicators (**Gjerdingen**, Figs. 1, 2; col 17, lines 35-50: EN: from the specification, attributes are synonymous with reliability indicators); second data fields corresponding to the first data fields and containing data representing values against which to compare the attributes (**Gjerdingen**, col 17, lines 51-61); third data fields containing data representing classifier outcomes (**Gjerdingen**, col 17, lines 51-61); fourth data fields facilitating determination of relationships among instances of the first, second, and third data fields, the relationships having a decision tree structure with the

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first and second data fields corresponding to decision nodes and the third data fields corresponding to leaf nodes (**Gjerdingen**, col 17, lines 51-61).

Claim 18

Gjerdingen anticipates the data represented by the first data fields comprises classical classifier outputs from a plurality of classifiers (**Gjerdingen**, col 17, lines 35-50).

Claim 19

Gjerdingen anticipates obtaining a set of training examples (**Gjerdingen**, col 17, lines 51-67; col 18, lines 1-3); applying a probabilistic approach that uses the training examples to develop a model that combines evidence to provide an output relating to whether an item belongs in a category (**Gjerdingen**, col 17, lines 51-67; col 18, lines 1-3); and storing the model in a computer-readable media for use as a classifier (**Gjerdingen**, Fig. 1, 2); wherein the evidence comprises one or more classical outputs of other classifiers and one or more attributes of the item other than classical outputs of classifiers (**Gjerdingen**, col 17, lines 35-50).

Claim 20

Gjerdingen anticipates obtaining potentially useful reliability indicators (**Gjerdingen**, col 17, lines 35-50); applying the method of claim 19 using various of the potentially useful reliability indicators as evidence (**Gjerdingen**, col 17, lines 35-50); and comparing the resulting classifiers to identify which of the potentially useful reliability indicators are, in fact, useful (**Gjerdingen**, col 17, lines 51-61).

Claim 22

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Gjerdingen anticipates the evidence comprises classical outputs from two or more classifiers (**Gjerdingen**, col 17, lines 35-50; EN see comments at Claim 1 above).

Claim 23

Gjerdingen anticipates obtaining the items in computer readable format, employing a computer to classify the item using a classifier generated according to the method of claim 19 (**Gjerdingen**, Figs. 1, 2; col 17, lines 35-50).

Claim 25

Gjerdingen anticipates the dependency models collectively contain dependencies based on one or more reliability indicators (**Gjerdingen**, col 17, lines 35-50).

Claim 27

Gjerdingen anticipates sequentially applying tests to the items to obtain test results (**Gjerdingen**, col 17, lines 35-50); and classifying the items based on the test results (**Gjerdingen**, col 17, lines 35-50; col 18, lines 1-3); wherein the sequence of tests applied varies among the items in that the outcome of one or more tests affects whether another test is applied, whereby the classifiers utilized vary depending on the items (**Gjerdingen**, col 17, lines 35-50).

Claim 29

Gjerdingen anticipates the classifiers are applied to the items selectively to avoid applications of classifiers that will not be utilized (**Gjerdingen**, col 17, lines 35-50; EN: this situation is not possible unless the classification is known in advance (a priori?) and then <u>only</u> that classification is exercised).

Claim 30

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Gjerdingen anticipates the second component automatically selects the potentially effective reliability indicators (**Gjerdingen**, col 18, lines 21-29; EN: since the family of weights represents that which is potentially effective, an automatic selection is axiomatic).

Claim 31

Gjerdingen anticipates the items are texts (**Gjerdingen**, col 5, lines 20-27; EN: computers typically have text integrated with graphics).

Conclusion

- 13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).
- 14. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. Claims 1-28 and 30-31 are rejected.

Correspondence Information

Any inquiry concerning this information or related to the subject disclosure should be directed to the Examiner, Joseph P. Hirl, whose telephone number is (703) 305-1668. The Examiner can be reached on Monday – Thursday from 6:00 a.m. to 4:30 p.m.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Anil Khatri can be reached at (703) 305-0282.

Any response to this office action should be mailed to:

Commissioner of Patents and Trademarks,

Washington, D. C. 20231;

or faxed to:

(703) 746-7239 (for formal communications intended for entry);

or faxed to:

(703) 746-7290 (for informal or draft communications with notation of "Proposed" or "Draft" for the desk of the Examiner).

Hand-delivered responses should be brought to:

Receptionist, Crystal Park II

2121 Crystal Drive,

Arlington, Virginia.

Joseph P. Hirl

March 30, 2004

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